**3GPP TSG-RAN WG2 Meeting #114 electronic R2-2xxxxxx**

**Online, May, 2021**

Agenda Item: xx

Source: Session chair (CMCC)

Title: Report from SON/MDT session

Document for: Approval

Recording of voice or video at meetings is not used in 3GPP. This applies also to this e-Meeting. At this e-Meeting, no specific actions are taken to prevent the recording of web conferences. Companies that have concerns related to recordings, if any, may express those by email in the main meeting organizational thread [AT114][000]

**Organizational:**

1. LSs – contact companies should flag LSs that need presenting. Otherwise we will directly note them
2. Running CRs will be endorsed to be used as baseline and moved to email discussion. Further agreements will be captured on that baseline CR.
3. Only Email discussions and summary discussions will be treated during e-meetings (indicated clearly in the meeting notes)
4. All organization emails and notes will be shared over the following email discussion throughout the two meeting weeks:
* [AT114][800][SON/MDT] Organizational Hu

Scope:

* + - Share plans for the meetings and list of ongoing email discussions for the sessions related to SON/MDT
		- Share meetings notes and agreements for review and endorsement

## 6.6 SON/MDT support for NR

(NR\_SON\_MDT-Core; leading WG: RAN3; REL-16; started: Jun 19; Completed June 20; WID: RP-191776).

Documents in this agenda item will be handled in a break out session

Tdoc Limitation: 7 tdocs. See also tdoc limitation for Agenda Item 6

### 6.6.0 In-principle agreed CRs

R2-2105996 SON-MDT Changes agreed in RAN2#113-bis meeting Ericsson, Huawei CR Rel-16 36.331 16.4.0 4673 - F NR\_SON\_MDT-Core

=> the changes are agreed and will be merged into big CR.

R2-2106007 SON-MDT Changes agreed in RAN2#113-bis meeting Ericsson, Huawei CR Rel-16 38.331 16.4.1 2662 - F NR\_SON\_MDT-Core

=> the changes are agreed and will be merged into big CR.

### 6.6.1 General and stage-2 corrections

Including incoming LSs, TS 37.320 corrections

R2-2105327 Corrections on accessibility measurements vivo CR Rel-16 37.320 16.4.0 0108 - F NR\_SON\_MDT-Core

R2-2105328 Correction on the support for RACH Optimization solutions vivo CR Rel-16 38.300 16.5.0 0374 - F NR\_SON\_MDT-Core

R2-2104734 LS Reply on QoS Monitoring for URLLC (S5-211350; contact: Intel) SA5 LS in Rel-16 NR\_SON\_MDT-Core To:RAN2

R2-2106005 [Draft] Reply LS on MDT Stage 2 and Stage 3 alignment Ericsson discussion NR\_SON\_MDT-Core

R2-2106064 Inter-node aspects of measurements for MDT in MRDC Samsung Telecommunications discussion Rel-16 37.320 NR\_SON\_MDT-Core

### 6.6.2 TS 38.314 corrections

R2-2105329 Corrections on the range of PER and the description of D2.1 vivo CR Rel-16 38.314 16.3.0 0015 - F NR\_SON\_MDT-Core

R2-2105998 On corrections to packet loss rate measurements Ericsson CR Rel-16 38.314 16.3.0 0016 - F NR\_SON\_MDT-Core

### 6.6.3 RRC corrections

R2-2105108 Clarification on RA reporting Apple, Samsung, Ericsson CR Rel-16 38.331 16.4.1 2603 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2105841 Correction to 38331 on CEF report trigger ZTE Corporation, Sanechips CR Rel-16 38.331 16.4.1 2649 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2105842 Correction to 36331 on RLF report ZTE Corporation, Sanechips CR Rel-16 36.331 16.4.0 4665 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2105997 On WLAN-BT configuration in reportConfigInterRAT in LTE Ericsson, Huawei CR Rel-16 36.306 16.4.0 1816 - F NR\_SON\_MDT-Core

=> The CR is not pursued.

R2-2106000 On the lack of PLMN identity check in case of OutOfCoverage event triggered logging Ericsson CR Rel-16 38.331 16.4.1 2659 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2106001 On OutOfCoverage event related measurement logging Ericsson CR Rel-16 38.331 16.4.1 2660 - F NR\_SON\_MDT-Core

=> The changes are agreed and the scenario will be further clarified during email discussion.

R2-2106003 On WLAN-BT configuration in reportConfigInterRAT Ericsson, Huawei CR Rel-16 36.331 16.4.0 4674 - F NR\_SON\_MDT-Core

=> The CR is not pursued.

R2-2106006 Configuration of location information for CEF reporting Ericsson, NTT Docomo CR Rel-16 38.331 16.4.1 2661 - F NR\_SON\_MDT-Core

=> The change is agreed and the wording can be further enhancement trough email discussion.

R2-2106150 Discussion on CEF report Huawei, HiSilicon, Apple, Qualcomm Incorporated discussion Rel-16 NR\_SON\_MDT-Core

R2-2106173 Configuration of location information for CEF reporting NTT DOCOMO INC. Ericsson CR Rel-16 36.331 16.4.0 4678 - F NR\_SON\_MDT-Core

R2-2106149 Correction on the release of obtainCommonLocation Huawei, HiSilicon, Samsung CR Rel-16 38.331 16.4.1 2670 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2105843 Correction to 36331 on T330 ZTE Corporation, Sanechips CR Rel-16 36.331 16.4.0 4666 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2105424 On duplicated RPLMN checking for availability indicator in logged measurements Samsung Electronics Co., Ltd CR Rel-16 38.331 16.4.1 2627 - F NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2105426 On duplicated RPLMN checking for availability indicator in logged measurements Samsung Electronics Co., Ltd CR Rel-15 36.331 15.13.0 4660 - F NR\_SON\_MDT-Core

=> CR is not pursued

R2-2105436 On duplicated RPLMN checking for availability indicator in logged measurements Samsung Electronics Co., Ltd CR Rel-16 36.331 16.4.0 4661 - A NR\_SON\_MDT-Core

=> The changes are agreed and will be merged into big CR

R2-2105330 Correction on the mandatory presence of ra-InformationCommon vivo CR Rel-16 38.331 16.4.1 2617 - F NR\_SON\_MDT-Core

=> CR is not pursued

R2-2106002 On User Consent related aspects Ericsson discussion

R2-2106038 Handling of user contest for location reporting in SONMDT QUALCOMM Incorporated, Apple discussion Rel-16

R2-2106151 Discussion on the user consent for trace reporting Huawei, HiSilicon discussion Rel-16 NR\_SON\_MDT-Core R2-2104003

* [AT114e][803][SON/MDT] Merged CR for R16 SON/MDT (Ericsson, Huawei)

Merge all the agreed changes into two CRs(38.331 and 36.331)

 Intended outcome: Agreed CRs

 Deadline:05:00 UTC, Thursday May 27

## 8.13 SON MDT

(NR\_ENDC\_SON\_MDT\_enh-Core; leading WG: RAN3; REL-17; WID: RP-201281)

Time budget: 0.5 TU

Tdoc Limitation: 3 tdocs

Email max expectation: 3 threads

### 8.13.1 Organizational

### 8.13.2 SON

Company contributions should focus on FFS issue which left from 113bis.

#### 8.13.2.1 Handover related SON aspects

R2-2106637 Summary of AI 8.13.2.1 Handover related SON aspects Ericsson

Agreements:

1 To represent Timer C, i.e. the “Time elapsed between the first CHO execution and the corresponding latest CHO configuration received for the selected target cell” introduce a new timer, e.g. timeSinceCHOReconfig.

2 To represent the measurement results of the candidate target cells:

Reuse the measResultNeighCells in the RLF-Report, and include an indication (depending RAN3 conclusion) on whether a measured neighbour cell was configured as a CHO candidate or not.

=> RAN2 to progress the following method to derive Timer D, i.e. the time elapsed between CHO execution until the first HOF/RLF: The TimeConnFailure is re-used with possible updates to indicate that it is started at CHO execution. Introduce a new timer is not excluded.

* [AT114e][801][SON/MDT] Handover related SON aspects (Ericsson)

Collect companies’ views on the cat-a and cat-b proposals in R2-2106637 which not discussed online.

Try to figure out the WFs based on majority views.

 Intended outcome: Email discussion report

 Deadline:11:00 UTC, Thursday May 25

R2-2104930 Further Discussion on CHO and DAPS Aspects CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105197 Further discussion on SON of CHO China Telecommunication discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105198 Views on the left issues related to SON of DAPS China Telecommunication discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105333 Discussion on CHO and DAPS enhancements vivo discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105446 Discussion on signalling aspects of successful handover report NEC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105476 Further clarifications on MRO Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core R2-2103550

R2-2105522 Further consideration of SON of HO related aspects OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105804 SON Enhancements for CHO Lenovo, Motorola Mobility discussion Rel-17

R2-2105805 SON Enhancements for DAPS Handover Lenovo, Motorola Mobility discussion Rel-17

R2-2105806 SON Enhancement for NR-U Lenovo, Motorola Mobility discussion Rel-17

R2-2105838 Remaining issues on HO related SON aspects ZTE Corporation, Sanechips discussion Rel-17

R2-2105862 Discussion on handover related SON aspects Huawei, HiSilicon discussion Rel-17

R2-2106010 HO related SON changes QUALCOMM Incorporated discussion Rel-17

R2-2106025 Handover-related SON aspects Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2106060 Remaining handover SON aspects, also covering multiple events Samsung Telecommunications discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2106134 Discussion on RLF report for DAPS SHARP discussion NR\_ENDC\_SON\_MDT\_enh-Core R2-2104070

R2-2106136 Successful HO report in DAPS SHARP discussion NR\_ENDC\_SON\_MDT\_enh-Core R2-2104071

R2-2106235 SON Enhancement for CHO, DAPS and Successful HO Report CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2106384 Further considerations on HO related SON issues LG Electronics Deutschland discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

#### 8.13.2.2 2 step RA related SON aspects

R2-2106480 discussion Summary on agenda item 8.13.2.2 2-step RA related SON aspects CATT

Agreements:

1 If a RA procedure switching from 2-step RA to 4-step RA occurs, one RA report entry is used to convey RA information for 2-step RA and 4-step RA attempts.

2 To introduce 2-step RACH related information in RACH report:

 enhance the legacy field ra-InformationCommon to include 2-step RA related information. FFS the detailed information.

R2-2104931 Further Discussion on RACH Report for 2-step RACH CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105334 Discussion on signalling and content of 2-stepRA report vivo discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105466 Discussion on 2-step RACH reporting in SON OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105477 Remaining Issues and New Aspects in 2-step NR UE Report Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105839 Remaining issues on RA related enhancements ZTE Corporation, Sanechips discussion Rel-17

R2-2105863 Discussion on 2 step RA related SON aspects Huawei, HiSilicon discussion Rel-17

R2-2106026 2-Step RA information for SON purposes Ericsson discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2106036 On logging of on-demand SI information QUALCOMM Incorporated discussion Rel-17

R2-2106133 Discussion on RA information for 2-step RA SHARP discussion NR\_ENDC\_SON\_MDT\_enh-Core R2-2104057

R2-2106236 SON Enhancement for 2-step RA CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

#### 8.13.2.3 Other WID related SON features

This AI will not be treated at this meeting and no input is expected.

R2-2106185 SON Enhancements for 2SRA, Successful HO Report and Others Samsung discussion NR\_ENDC\_SON\_MDT\_enh-Core

R2-2106237 Further consideration on UL-DL coverage mismatch CMCC discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

### 8.13.3 MDT

#### 8.13.3.1 Immediate MDT enhancements

This AI will not be treated at this meeting and no input is expected.

#### 8.13.3.2 Logged MDT enhancements

R2-2106482 discussion Summary on agenda item 8.13.3.2 Logged MDT enhancements Huawei

Agreements:

1 For the content for on demand SI:

 Include information to differentiate between Msg1-based or Msg3-based on-demand SI request. How to convey the information is FFS.

 UE records intended SIBs for failed on-Demand SI request. FFS the successful case.

=> Progress through email discussion (CATT): There are the following options for reporting on demand SI related information:

Option 1: Extend Logged MDT ([1], CATT; [6], ZTE)

Option 2: Extend RA report ([7], LG Electronics UK; [10], Samsung)

Option 3: ([8], Ericsson)

Extend RA report to include successful on-demand SI related information

Extend CEF report to include failed on-demand SI related information

Option 4: ([11], Huawei, HiSilicon)

Extend RA report to include successful on-demand SI related information

Introduce a new report to include failed on-demand SI related information

* [AT114e][802][SON/MDT] Reporting on demand SI related information (CATT)

Collect companies’ views on the four options:

Option 1: Extend Logged MDT

Option 2: Extend RA report

Option 3:

Extend RA report to include successful on-demand SI related information

Extend CEF report to include failed on-demand SI related information

Option 4:

Extend RA report to include successful on-demand SI related information

Introduce a new report to include failed on-demand SI related information

Collect the option based on majority views.

 Intended outcome: Email discussion report

 Deadline:11:00 UTC, Thursday May 25

Agreements:

1 In order to avoid overwriting of signalling-based logged MDT, UE-assisted and network-based solution, which relying on network implementation through UE providing assistance, is introduced.

Two alternatives:

- UE-based solution, which is UE rejects network configuration

- UE-assisted and network-based solution, which relying on network implementation through UE providing assistance

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| --- | --- | --- |
| **Options** | **Source** | **Detailed proposals** |
| 1 | [2], vivo | Proposal 1: Upon reception of the assistance information (indicating the logged MDT type), NW shall be able to avoid the logged MDT being overwritten in the following scenario: the previously configured logged MDT is signalling-based, while the latest logged MDT configuration is management-based. |
| 2 | [7], LG Electronics UK | Proposal 2. If MDT configuration is released and the UE has un-retrieved logging information, the UE sends *UEAssistanceInformation* to inform the type of logging information (i.e. management-based, signaling-based) to the network. |
| 3 | [8], Ericsson | Proposal 6: UE needs to store the flag information until logged MDT report are collected by the network or till 48 hours after T330 expiry.Proposal 7: A UE configured with signalling-based MDT sends an explicit reject message to RAN if it receives a management-based MDT configuration.Proposal 8: Status of T330 timer can be included in the loggedMDTReject message to assist the network in avoiding overwriting. |
| 4 | [10], Samsung | Proposal A.1, A.2, A.3 |
| 5 | [11], Huawei, HiSilicon | The UE reports the logged MDT type to the network only when: Signalling based Logged MDT is configured, but no results are available e.g. so far nothing stored, or all previously stored results retrieved Signalling based Logged MDT configuration is stopped (i.e. the expiry of T330), but UE still has un-retrieved results that would be discarded upon accepting a new configuration |

From summary rapporteur’s point of view, option 1/2/4/5 are to reply on network to solve the issue (e.g. by network implementation), and option 3 suggests that UE rejects network configuration. Among all proposals, how the UE should set the assistance information is also heavily discussed.

R2-2104932 Consideration on MDT Enhancements for On-demand SI CATT discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105335 Discussion on Logged MDT configuration vivo discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105478 Logged MDT and other enhancements Nokia, Nokia Shanghai Bell discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105616 Consideration of enhancements for logged MDT OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core Late

R2-2105625 Consideration of enhancements for logged MDT OPPO discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2105840 Remaining issues on logged MDT ZTE Corporation, Sanechips discussion Rel-17

R2-2105884 Discussion on FFS issues LG Electronics UK discussion Rel-17

R2-2106004 On logged MDT related enhancements Ericsson discussion

R2-2106037 Logged measurement Enhancements QUALCOMM Incorporated discussion Rel-17

R2-2106057 R17 Logged MDT issues (on overwrite, IRAT/ MR-DC, logging non camping freqs, IDC and OSI) Samsung Telecommunications discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

R2-2106152 Discussion on logged MDT enhancements Huawei, HiSilicon discussion Rel-17 NR\_ENDC\_SON\_MDT\_enh-Core

### 8.13.4 L2 Measurements

This AI will not be treated at this meeting and no input is expected.

??Email discussions after the meeting:

* [POST 114e][xxx][SON/MDT] Modeling of CHO and DAPS related RLF reports (Ericsson)

Scope：

- Model for storing (one variable or…) and/or reporting of Rel-17 report entries

- Enhancing FailureInfromation message vs using RLF report in certain scenarios (e.g., dual failure scenarios)

- Current Rel-16 version (after Jun Plenary) can be used as a baseline to start discussing the ASN.1 changes required for different options.

 Intended outcome: Email discussion report

 Deadline: before next meeting

* [POST 114e][xxx][SON/MDT] Procedures and Modeling of successful HO report (?)

Scope：

Procedures for triggering of successful HO report

Modeling of successful HO report configuration and reporting

Use the current Rel-16 version (after Jun Plenary) as baseline to start discussing the ASN.1 changes required for different options

 Intended outcome: Email discussion report

 Deadline: before next meeting